

A
PRELIMINARY DISSERTATION,
ILLUSTRATIVE OF
A NEW SYSTEM
OF
PULMONARY PATHOLOGY,
SUPPORTED BY A SERIES OF
CONCLUSIVE
PHYSIOLOGICAL EXPERIMENTS:
COMBINING
A RATIONAL THEORY WITH A SUCCESSFUL METHOD,
OF CONDUCTING THE CURE OF
CONSUMPTION.

BY
P. P. P. MYDDELTON, M.D. &c.
AUTHOR OF A TREATISE ON THE DIAGNOSIS AND PROGNOSIS
OF DISEASES, AN ESSAY ON GOUT, AND CLINICAL
REPORTS OF SELECT MEDICAL CASES,
WITH PRACTICAL NOTES.

..... " *Si quid novisti rectius istis,
Candidus imperti ; si non his utere mecum.*" HOR.

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ISAAC BRINCKERHOFF, M.D.

NEW YORK.

DEAR SIR,

HAD I published my Treatise on Pulmonary Diseases and their usual combinations, or even my Introductory Lecture, in the United States, I should certainly have selected you for my Dedication, in preference to any other professional friend; and, in doing so, I should have been actuated by various motives, which still exist, even in another hemisphere. You were my first and only regular pupil in that new, intricate, and most interesting inquiry: you have been the daily observer of my peculiar practice: you have so often seen the application, and duly appreciated the value, of that treatment, by which Consumptive Patients have been transferred from the verge of the grave to the temple of health. I have, moreover, made you

the depository of a copy of my clinical notes, as your future practical guide, for the benefit of your own citizens.

The considerations to which I refer you in the Preface, will suspend, for the present, the publication of my Systematic work; but to atone, in some degree, for that disappointment to my greatly esteemed Transatlantic friends, I will no longer delay the publication of that Lecture, which has, during the last twenty-two months, excited such general interest in your happy and prosperous country, and which I now offer to you in testimony of the sincere regard with which I am,

DEAR SIR,

Your faithful friend,

P. P. P. MYDDELTON.

Oldfields Lodge,

Near Bath; Oct. 1st, 1825.

PREFACE.

AN explanatory apology is due to my numerous and much-valued Transatlantic friends, both private and professional, for having published that Lecture in England, which they had so long and so often solicited in the United States, and not my contemplated "Treatise on the Morbid Impressions of the Respiratory Organs,"* which I had promised them to put to press on my arrival in this country.

To divert the *ennui* of a sea voyage, I entered upon a review of the manuscript of that work, at a period when my mind was, comparatively, free from professional anxieties, and disengaged from domestic

* Announced in the 15th Number of the Philadelphia Medical Recorder.

occupations. In the course of that examination, I discovered that during the last sixteen months the great increase of my practice in Pulmonary Diseases had supplied me with a considerable increase of interesting materials, which ought to be incorporated in a Work, from which, I am aware (by taking a retrospective view), much is expected. Nor ought I to withhold my acknowledgements (among other professional testimonials in my possession) to the Editors of the Boston Medical Intelligencer for the following frank and liberal expression of their sentiments, extracted from the long report of my Lecture delivered in April last at the Medical College of that city:

“ We feel the force and confess our full conviction
“ of the truth of Dr. M.’s remarks, and believe that
“ topical application immediately to the diseased organ,
“ in all species and in all stages of Pulmonary Con-
“ sumption, is far superior to any mode of treatment
“ with which we have ever been made acquainted.”

The Appendix, also, can be much enlarged by additional cases of great practical utility. As the arrangement of those objects will, necessarily, retard the publication of that work, I have been advised to send forth the Introductory Discourse as a beacon, in the same form in which it was delivered, and received in the United States, with so much favour and unanimity, until I have leisure to complete the other manuscript. And as the theory and practice contained in the following pages are altogether new, and might not yet have found their way to Great Britain, so the publication of the Preliminary Discourse may serve as an *avant-courier* to the more elaborate offering on the altar of Humanity.

In the interim, however, I consider it a public duty, imposed upon me by the awful character of the disease, to express my readiness to communicate, without re-

serve, with my professional brethren, and with others more immediately interested, upon any point connected with the subject matter of this Essay, on which I may not have been, in the present instance, sufficiently explicit.

THE AUTHOR.

Oldfields Lodge, near Bath.

PS. The deep sympathy which I have so long felt for the once hapless subjects of chronic pulmonary disease has been powerfully excited by my own domestic afflictions, and which the lapse of fourteen years has not obliterated. The operation of those feelings, in combination with the promising prospect which has, at length, opened to my view, of counteracting its extension and of defeating its mortality, have determined me to devote my remaining days, *exclusively*, to that most interesting class of patients. In furtherance of this object, I have consulted various statistical

records, to enable me to ascertain and select the most sanative temporary retreat for consumptive patients, at all seasons of the year, more especially during the cold months ; embracing,

1st. A dry atmosphere of mild temperature, REMOTE FROM THE SEA-SHORE.

2dly. Complete shelter from the North and North-East winds.

3dly. Commodious accommodations for visitors.

4thly. Rational and polished society, so conducive in soothing the mind under corporeal suffering.

These requisites I have met with at the city of WELLS, on the south side of the Mendip Hills, in the county of Somerset, 20 miles west of Bath. It is not only the most eligible situation (to which my researches have led) in the United Kingdom, but, it would seem, greatly preferable to the South of France, or Italy, Lisbon, or Madeira; for the temperature of those climates is MUCH TOO HIGH, during the sum-

mer months, to admit of necessary exercise, independently of being extremely oppressive to pulmonary patients, without any reference to the attendant inconveniences of such removal to invalids, or the painful separation from friends, and the comforts of a native domestic circle; and that too without deriving any sanative advantage whatever from such change of country, which fatal experience has so often lamentably confirmed.

P.P.P.M.

A Preliminary Dissertation, &c.

IN contemplating the vast and sublime works of that God whom we all intuitively adore, the mind instinctively reverts to that most wonderful and mysterious era when chaotic matter became transformed, at the mandate of Omnipotence, into the beauteous orb which we inhabit. From that remote data, or, more probably from the fall of Adam, DISEASE, in various forms and gradations, became the entailed inheritance of organized matter, at the WILL OF THE DEITY: yet, with humble submission to the Divine will, and coeval with disease, hath the energies of the human mind been called forth defensively; and devoted, in all ages, to the investigation of causes and the developement of effects, so essential to the successful application of a controlling power; and that devotion we find to have been in the ratio of its poignancy, or the

fatality of its result. We also find that where the human mind, from defective culture, remains unexpanded, a benign and merciful Providence has interposed, by placing within the reach of his less favoured children, who are, unfortunately, out of the pale of civilized life, the means of mitigating their own sufferings; a fact so strongly exemplified in the untutored aborigines of Asia, Africa, and America: for, while we readily concede the point that they are illiterate, we claim for them, in the spirit of charity and of truth, the merit of being proverbially acute; and, of course, as sensible of the pains inseparable from derangement of animal matter, as susceptible of the pleasures which result from renovated health. With such all-powerful incentives then, we cannot hesitate to give credence to the prevailing opinion that, by tradition, by experiment, and observation, they have even vied with the resources of education, and the radiated rays of light which science imparts, by having diligently sought, and ultimately discovered, in the secret recesses of their wilderness, such remedies as correspond with the diseases and casualties inci-

dent to their primeval habits and limited necessities: whilst that incomprehensible emanation of the mundane soul, called instinct, directs the brute creation to the same object. But man, in a state of civilization, with a mind trained to research, enters upon his career of inquiry under circumstances more auspicious: he will resort both to ancient and modern authorities, in a similar pursuit. The exclusive attribute of REASON will be *his* guide, and matured judgment will govern his decisions. By referring to the former, he will learn that some diseases have happily become extinct; and by consulting the latter, in combination with his own observations, he will readily ascertain the melancholy fact that others have multiplied, and that to an alarming extent, either from inexplicable or constitutional causes, dependant, perhaps, in some degree, upon modern customs, or our own individual habits.

The subject matter of this Lecture (introductory to a new system, combining a more rational theory with a more successful method of treatment than any hitherto promulgated) is one of

those diseases to which I allude, and which imperiously demands further elucidation, both from its acknowledged prevalence and increasing mortality.

This most interesting and arduous inquiry has been the object of my zealous and almost exclusive pursuit for several years; and its illustration has led me with a steady step, and unabated zeal, through an extensive, difficult, and unexplored region of rigid investigation. My limits, however, upon this occasion, will only allow me to present you with a brief outline of that theory, and the corresponding practice founded upon it, as well as a concise view of my arrangement of Pulmonary Consumption under five distinct heads, with some reference to collateral considerations of great practical importance.

1st. The hereditary or constitutional disease, arising from causes of remote origin.

2dly. The acquired disease, as communicated

to persons in the full possession of health, who are not predisposed to pulmonary derangements.

3dly. The primary disease in combination with other visceral affections.

4thly. That modification in which the digestive organs are the *primary*, and the pulmonary organs the *secondary*, or sympathetic source of morbid action, which may be truly termed *Dyspeptic Phthisis*. And, lastly, that form of the disease which may be produced by *casual* causes.

In this classification I include those Catarrhal affections arising from inflammation of the larynx and mucous membrane of the bronchial tubes, which often assume all the external characters of confirmed Phthisis: and so, indeed, with chronic inflammation of the Pleura; for that membrane undergoes a progressive change of structure from a simple effusion of lymph, until, by continued depositions and thickenings, it acquires the vital property of exhalation, and often terminates in empyema.

The diagnostic distinctions of these modifications of Phthisis will be the subject of a minute report in another place, being quite incompatible with the condensed arrangement of a solitary lecture. In the course of this inquiry, I may occasionally digress, with the view of supporting my positions by such historical facts and practical examples as will, I hope and presume, be deemed satisfactory. As I shall cautiously abstain from all speculative hypothesis, by resting my opinions upon experimental and practical proofs only; so, in return, I expect from your candour a dispassionate examination of those doctrines which have uniformly been received in a distant country with distinguished marks of approbation, and that too under the natural disadvantage of being of foreign origin.

Hereditary or constitutional Consumption is, by much, the most prevalent form of the disease, and the product of a strumous diathesis, generated, for the most part, by past generations, and by various causes. It is, nevertheless, a fact of practical notoriety, that we occasionally meet with

patients, at different periods of life, affected with scrofulous tumours on the external surface ; while we meet with others who exhibit strongly marked symptoms of Phthisis Pulmonalis, without being able to trace the origin of either disease to any relative source. I must, however, remark, that even a change of location, from an elevated country and pure air to the exhalations of a low marshy situation and humid atmosphere, by deranging the gastric secretion, and impairing the energy of the digestive functions, will induce defective absorption of nutritious particles of food from those organs ; a consequent flaccidity of the muscular fibre ; and predispose persons so situated to glandular obstructions, which an impoverished diet, impure water, and mental anxiety, would still further increase. In corroboration of this opinion, I can state, from my own personal observation, the fact that several English and Scotch families of my acquaintance, who had removed to Holland with commercial views before the Revolution, in a few years became martyrs to scrofula, from the operation of causes already recited ; for they had previously

exhibited no symptom of glandular or cutaneous disease: and it is worthy of being recorded, that the junior branches of those families were the least sufferers by that disease until they had approximated to the age of puberty: they then became affected with glandular tumours, or chronic pulmonary disease, and, in some instances, both existed at the same time, and were simultaneous in their progress: the majority of cases, however, it must be admitted, were purely scrofulous. I am, nevertheless, quite aware, that the converse of those appearances is more usual in the real hereditary scrofula, where we often see the disease exhibit itself in early infancy. From a residence of several years in Ireland, with ample opportunities for observation, I have remarked that her population is more subjected to scrofula and pulmonary consumption, even in the more elevated ranks of life, than any other section of the united kingdom with which I have had intercourse; and I am led to infer that we may trace the cause of the calamity to the extreme humidity of the atmosphere, occasioned by the exhalations from the numerous large lakes

and extensive bogs with which that hospitable and fruitful country abounds;* and, among the labouring class of the community, we may, unfortunately, add an impoverished diet, and an habitual disregard of cleanliness, by which the exhalents of the skin are interrupted in the free performance of their appropriate functions, and the subcutaneous glands subjected to congestion or morbid sympathies, by the partial retention of the noxious excreta: so, in northern latitudes, the intensity of cold, without judicious covering, will induce constriction of the capillary vessels of the skin, impede the exit of perspirable matter, and thus destroy the equilibrium of the cir-

* The same observations are applicable to New York. That city stands on an Island, open to the Atlantic Ocean on the South, and two wide rivers, North and East, with an extensive swamp on the West. The mortality, by Consumption, at New York, in 1822, was 715, while that in the city and county of Philadelphia (with a greater population) amounted to 438 in the same year; and nearly the same difference marked the preceding and subsequent years; but in 1824 the mortality in the latter city and liberties was 536, and in New York 683. Philadelphia also is situate on the confines of two rivers, but exempt from the influence of a marine atmosphere and a morass.

culating fluids, so necessary in the economy of health. That Pulmonary Consumption, derived from hereditary taint, can be communicated to persons who are not predisposed to that hitherto ungovernable disease, I have had innumerable unequivocal examples; from attentive observation, with ample opportunities, for more than forty years; but that lamentable occurrence, my experience also teaches me to believe; most confidently, never obtains unless by *direct exposure to the patient's expirations when open ulcers actually exist* in one or both lobes of the lungs, manifested by the expectoration of *pus*. The seeds of the disease are thus sown in the pulmonary organs; tubercles are thence generated in the parenchyma or cellular substance of the lungs by absorption: those tubercles I consider to be diseased and indurated glands attached to the lymphatic system; and, like scrofulous tumors in other parts of the body, or on the external surface, depending on enlargement of lymphatic glands, have a constant, though languid, tendency to progress to suppuration. Those tubercles also I consider as extraneous bodies; and, like

other extraneous bodies differently situated, induce the suppurative inflammatory action, and communicate that excitement to the surrounding parts. The Spaniards and Italians have long been impressed with the belief that consumption is a contagious disease; and, in consequence of that opinion, they are in the habit of consuming, by fire, every garment which has come in contact with their departed friends, in the delusive hope of counteracting its extension by an expedient so futile. A similar opinion is also very prevalent in Scotland, handed down from generation to generation, and confirmed by the continued observation of that industrious, moral, and intelligent people. In order to illustrate, and I hope set at rest, that long contested and most important question, "Can Consumption be communicated?" I will cite a few prominent cases, selected from a number of others of a similar tendency; which have fallen under my own immediate observation, and which I have been in the habit of recording in my adversaries, from time to time, as they occurred, both in my private and public practice, as physician to an extensive charitable establishment.

The warm attachments formed at public schools, at a period of life when the finest feelings of humanity are uncontrolled by ambitious or sinister views, are familiar to us all. About fifteen years ago, the three daughters of one of my much-esteemed friends became the hapless victims of such attachment. The eldest had imbibed a sincere affection for a young lady fully entitled to her tenderest regards. A domestic calamity, of no ordinary character, had plunged that innocent young lady into the deepest abyss of affliction; her health soon yielded to the force of grief, and she accepted an invitation to my friend's house in the country for change of scene and air. I visited her professionally; she expectorated pus from ulcerated lungs, and ultimately expired. Her father, I was informed, had also died of a similar disease during her infancy. My friend's eldest daughter slept in the same bed with that child of sorrow, and was her constant attendant to her last moments. The impression which so melancholy an event produced on the sensitive mind of my friend's daughter was great in the extreme; at

length it became necessary to force her, as it were, into company to dissipate her gloomy reflections. From her long confinement and unremitting attentions to her much-valued and greatly deplored friend, she had become morbidly susceptible of the atmospheric vicissitudes of a mutable climate: she took what is called *a cold*, a chronic pulmonary disease ensued, and, under the usual most approved medical treatment, her spotless life was claimed as a sacrifice at the shrine of friendship! Her two sisters also, from similar devotions to each other, were consigned to premature tombs within the short period of three years! I must here observe, that no member of my friend's own family, or that of his wife, had ever been known to be affected with any pulmonary, glandular, or cutaneous disease.—I will intreat your further indulgence while I report a few other cases, tending to the same melancholy conclusion, which I am the more solicitous to record, as the principle cannot be too deeply inculcated, or too generally known, for the preservation of the present and future generations. A lady, aged

19 years,* married a surgeon of my acquaintance. From the usual routine upon those occasions of receiving and returning visits among an extensive circle of friends, she became much exhausted, and her general health seemed to decline; a cough succeeded, with a slight obtuse pain in the chest, accompanied with other symptoms indicative of incipient affection of the pulmonary organs; pregnancy supervened, and the symptoms became much meliorated during gestation; but, in a few days after her accouchement, her former symptoms recurred with increased force, accompanied by an accession of some new ones, and the progress of the disease was so rapid as to terminate her existence within five months. The infant, likewise, exhibited evident marks of pulmonary derangement, accompanied by two glandular tumours under the right ear and left arm, which did not suppurate, and he survived his mother only 16 days.

The lady, at the period of her marriage, appeared to be in excellent health; it was, how-

* Her mother had died of Pulmonary Consumption.

ever, subsequently ascertained that she had had an eruption upon her neck which greatly annoyed her, and by the advice of some female friend, she applied a repellent lotion: the eruption soon vanished, and from that period she dated her declining health, and eventual death. I have frequently been consulted by patients labouring under Pulmonary Consumption in its different stages, from the tuberculous to the ulcerative; who have traced its origin to repelled eruptions on various parts of the external surface.

The husband of the lady, whose case I have just reported, was a robust man, and entirely free from any hereditary taint; by exposure to the weather in a wet season he took cold, his lungs became the immediate seat of chronic disease, and he survived his wife only seven months and twelve days. In addition to these fatal examples, young priests have become the victims of Pulmonary Consumption, who had been sensible of having inhaled a noxious vapour from the mouths of persons in the *advanced* stage of the disease during their auricular con-

fessions. Some months since I was consulted by a respectable mechanic, who, at that period, expectorated about two table spoonsful of pus within the twenty-four hours. He had married the widow of another mechanic, who had died of Pulmonary Consumption nearly three years ago; and the woman herself, I have also been informed, died about a year since, from whom my patient contracted his disease. When he first applied to me for advice he was much emaciated, and labouring under considerable loss of muscular power. By repeated analysis of the sputa, I found that the purulent discharge decreased from week to week; his returning strength kept pace with that favourable change, so that in two months his weight was sixteen pounds more than when he became my patient, and he is, at this time, in the full enjoyment of health.*

* It might be objected by the sceptic, that this unhappy result does not invariably obtain. God forbid it should! He should, however, recollect the influence of idiosyncrasy. It is well known that persons have at one time escaped the most malignant contagion under the same roof; for instance, confluent small pox; when, *at another time*, the same subjects have taken variola without being actually exposed to the infection.

With these and many similar facts before me on record, I consider it a public duty to embrace the earliest opportunity of being explicit upon this part of my subject, more especially as the question has been long doubted or denied by high and imposing authorities. Nor can I too strongly impress upon your minds the danger of cicatrizing habitual ulcers, without *previously* opening artificial drains, or of repelling eruptions on any part of the external surface, as well as that of coming in contact with the exspirations of your friends or patients, whose lungs are in a state of *actual ulceration*, before you have attained the age of 35: after that period there is less susceptibility of imbibing the morbid impression; confiding, at the same time, that by adopting necessary precautions for your own preservation, you will not relax in your humane attentions to that most interesting class of sufferers, who truly possess such powerful claims upon our sympathy.*

* Nor is the fact of Consumption being capable of communication, confined to my own observations. In several late conversations with Dr. Felix, of Bristol, (this gentleman

Whilst the means of prevention are under consideration, I am desirous of offering to your serious attention a few further observations upon a subject at once so interesting and so important. As contagion is supposed to depend upon the morbid influence of a DEBILITATING agent acting upon some part of the system, so I apprehend we may, in this case, fairly infer, by analogy, that by inhaling, from time to time, the vapour issuing from lungs in a state of *actual ulceration*, and discharging purulent matter, such morbid influence may be conveyed to, and absorbed by lungs in the full possession of their functions, and thus propagate the disease by producing atony in the pulmonary nerves. It is upon this principle, I am of opinion, that we ought to account for what I consider a NEW FACT, namely, that Pulmonary Consumption cannot

had, for seven years, the medical superintendence of the dépôt of prisoners at Stapleton,) he informed me, that after Consumption had once made its appearance among the prisoners, he had observed a considerable and progressive annual increase of that class of patients; and that most of the nurses, under the age of 40, became the victims of the same disease.

be communicated, unless OPEN ULCERS actually exist in one or both lobes of the lungs, manifested by the expectoration of *pus*. Upon this theory I have acted for several years, by resorting to the direct application of a tonic to the exposed organs in the incipient stage of local affection, and before any impression could have been made upon the general system. Peruvian bark and sulphate of iron are my usual resources upon those occasions where it has been too late to adopt the first precaution; and it is a consideration worth bearing in mind, that none of those persons who have embraced those preventive means have yet been visited by chronic pulmonary disease, although the usual exciting cause had been often applied. Nevertheless, I will not assume the responsibility of deciding, positively, that which probably never can be determined with certainty, that such escapes were the result of the mean pursued, and which, from self-conviction, I continue to recommend, as it gives very little trouble, and is attended with no sort of inconvenience. I must further add, that that conviction is derived from

several instances within my immediate recollection of the disease having been communicated to the attendants who had disregarded my instructions; and in one recent case at Philadelphia, (since my removal to New York,) the death of a young and amiable sister has been the unhappy consequence, leaving two orphan children, of tender years, to deplore their irreparable loss at some future day.

When tubercles form in the lungs they are minute and in clusters, but when seated in the smaller intestines they are distinct; and, in either case, remain in a latent or inert state for an indefinite period, even for years, until forced into action by the application of an exciting cause, such as is commonly termed a cold: some of those tubercles then inflame and enlarge, and would progress to suppuration, unless the accumulated excitement be early subdued by judicious medical treatment. Other tubercles, likewise, might undergo similar morbid changes; and, if left uncontrolled, the lungs would ultimately become entire masses of dis-

ease. The removal then of tubercles, by RESOLUTION, has been a desideratum long sought for in vain in every age and country, and is unquestionably an object of the very first magnitude, both to the physician and the community. If then, in the sequel, I shall be enabled to point out the means of obtaining so important a conquest over an old and insidious enemy, my gratification will be complete, inasmuch as I shall not only disarm tubercular consumption of its former eventual fatality, but also rescue our profession from that opprobrium which has been coeval with the disease itself.

A late writer has advanced some new and extraordinary opinions, which I have reviewed in another place; and among others, that "tubercles, when once fully consolidated, do not subsequently pass into a state of suppuration; and that such condition is to be desired as a favourable termination of the disease."

While I duly appreciate the talents and researches of that author, I can neither surrender

my own judgment, or disregard my own observations, upon a point of such vital importance. So far from considering "consolidated tubercles a favourable termination of the disease," I should think that event most unfavourable, and my opinion is formed by taking a twofold view of the question: 1st, because such disorganization and change of structure must greatly limit the action of the respiratory organs, by the obliteration of the air cavities and passages of such portions of the pulmonary organs as may be occupied by indurated tubercles, as well as impede the oxydation of the blood; and 2dly, because consolidated tumours, either large or small, internal or external, too often terminate in *cancerous* ulcerations; an event by no means to be "desired" even upon the external surface, and, of course, much less so when seated in vital organs; unless it can be *proved* that the lungs, in that respect, possess peculiar and exclusive privileges, which is extremely doubtful when those organs have become hepatized. Under my third head of classification, you doubtless recollect that I adverted to *combinations* of disease with pulmonary

consumption, and I shall now proceed to state, not only that one visceral organ will sympathise with another and partake of the same morbid condition, but that that fact is more frequently exemplified than is generally imagined between the lungs and the *liver*, which diligent inquiry cannot fail to detect: yet it too often happens that the pulmonary affection wholly absorbs the attention both of the physician and unconscious patient, without once suspecting any hepatic derangement; and that oversight is the more extraordinary, as no disease with which we are acquainted is more strongly marked by pathognomonic characteristics. The pancreas, likewise, and mesenteric glands, participate with chronic disease of the lungs, arising from a strumous diathesis; and occasionally we see determinations made to the surface, which progress to suppuration, even in the last stage of the disease, and near the fatal close of the scene.

I have now arrived at my fourth designation of phthisis, namely, that in which the *digestive*

organs are the *primary* cause of pulmonary derangement.

In the early stage of indigestion we find little difficulty in restoring the tone of the digestive functions, but negligence, irregularity, or inattention on the part of the patient, too often protracts the disease until the second stage supervenes; the liver then sympathises with the stomach and its vitiated secretion; the bile also now undergoes a morbid change, ushering in a new train of symptoms: at this period, *and not before*, the lungs participate, by sympathy, in the organic affection, and thus create what may be truly termed *dyspeptic phthisis*. The obvious indication in such cases is, to restore the lost tone of the digestive organs and hepatic gland: thus, by improving the condition of their secretions, the pulmonary symptoms will subside, sympathetically, without resorting to other means, unless the disease be of long duration; in that case, the lungs will become ulcerated, and require *direct* application, in conjunction with the plan of treatment which has been suggested. But, in dyspeptic

phthisis, I have met with cases in which ulcerated lungs have yielded to DIRECT application, when I have not been able to subdue, by general treatment, the *primary* disease of the digestive organs, and the consequent hepatic derangement. I have, however, more frequently observed, that the lungs cannot be restored to their healthful functions, unless we can previously overcome the *primary* disease of the digestive organs. As such combinations of disease require very different medical treatment from that which is applicable to pulmonary consumption in its individual form, so it is of vital importance to obtain correct information, in the first stage, or at the first consultation, before the patient's strength be exhausted by a combined and undefined disease.

It is manifest, and it is admitted by all without hesitation, that an accurate diagnosis constitutes the prominent feature of successful practice in every disease, more especially in those of the pulmonary organs, from the peculiarly insidious character of the symptoms in the incipient stage; so vague and obscure as to elude cursory inquiry,

until the disease has advanced to that stage which might endanger life under the most approved treatment. So fully was I impressed with the vital necessity of designating diseases with accuracy, that so far back as 1792, I published a work upon that subject in London, entitled "A Treatise on the Diagnosis and Prognosis of Diseases." It is a fact well known to Physiologists, that the covering membrane of the lungs, and other viseral organs, as well as the lining of the cavities and periosteum, are acutely sensible when invaded by inflammation; and that the parenchyma, or substance of those organs, is not so, even of the heart itself. In the former, the pain is excessive, from its nervous structure, and the excitement great; in the latter, *which is the actual seat of Tuberculous Consumption*, the pain is so slight and obtuse as to induce little excitement or immediate inconvenience. The former runs its course with rapidity; the latter is slow in its progress, but more destructive in its consequences from its deceptive character.

In the medical management of the disease

called Consumption, it is most essential to ascertain the actual state of the pulmonary organs, and that with some degree of precision. To obtain such information satisfactorily, we must subject the sputa, in the first instance, to the test of experiment, by dissolving it in sulphuric acid, then add about an equal quantity of water, and leave it in a quiescent state for a few hours; in the event of the lungs or the bronchial tubes being ulcerated, a precipitation of pus will take place; but should the solution exhibit no sign of precipitation, we may confidently conclude there is no ulceration; nor is this the only test to which we can resort. Pus may likewise be distinguished from mucus by the aid of a microscope, as the former is globular, and the latter flaky. Muriate of mercury also will afford us that information, for it will coagulate mucus, but it will not coagulate pus. The chemical test is, however, greatly to be preferred, inasmuch as the *quantity* of the pus precipitated within a given period, can be more accurately ascertained, which will enable us to determine, with some degree of certainty, the

extent of ulceration, and by which, combined with a due regard to the state of the animal functions and hepatic system, we can form a more correct prognosis.

The experiment on the sputa should be repeated, from time to time, and the precipitate weighed with care, or the quantity ascertained by a graduated measure. Its gradual diminution will be a fair criterion that the granulating process is progressing; and when the deposition has disappeared, we may, with good reason, infer that the cicatrization is completed. And I have uniformly observed, that the return of animal vigour is simultaneous with the decrease of purulent expectoration. The first stage of constitutional disease of the lungs is marked by the presence of tubercles, which take partial possession of those organs, and which I hold to be analogous to those glandular tumors we meet with in cases of scrofula or bronchocele. This may be an unpleasant fact to promulgate; but when human life and professional character are involved in the question, the voice of truth

should silence the whisper of false delicacy, otherwise we abuse the confidence reposed in us. And I feel it necessary to observe, in continuation, that in this opinion I am supported by the highest medical authorities. It is also as true that one generation may intervene without exhibiting any feature of constitutional disease, either by glandular tumors upon the external surface, or by chronic disease of the pulmonary organs, or mesenteric glands, although it may reappear in the next in an aggravated form. I have known some brothers and some sisters, of different families, escape hereditary scrofula and pulmonary consumption, while other brothers and sisters of the same family have fallen victims to the one or the other disease, notwithstanding all of them had been equally exposed to the operation of the same exciting cause, and had partaken of similar domestic habits. And among many others which I have observed, this fact has been most painfully verified in my own family, by the loss of a son and a daughter of matured years and of great promise, while the survivors have exhibited no feature of the disease

at any period, or in any form ;* a phenomena in the animal economy, which Physiology has not hitherto, and probably never will, be able to explain.

When tubercles are suspected to exist in the lungs from the attendant symptoms, (which will be minutely recorded in another place) without evident marks of vascular excitement, I confide chiefly in the absorbent action of the pulmonary vessels for their discussion, agreeably to the doctrine which will be hereafter illustrated by a series of physiological experiments. We must, at the same time, keep in view the state of the digestive organs and hepatic secretion: but in the event of moderate excitement, I generally put the system under the actual influence of digitalis, as a more safe mean of restraining the excess of artereal action, than by the abstraction

* Yet, on my arrival in England, a few weeks since, I was grieved to find my son's eldest daughter labouring under constitutional disease in the very last stage. This has this tender and once lovely scion been afflictingly severed from the parent stock by another variety of this fatal disease, and that too ere its promised blossom had escaped from the bud.

of blood ; unless, indeed, in plethoric habits, and even in those cases, great caution should be observed, otherwise the patient may be prematurely and unnecessarily exhausted. I am the more desirous of pressing this remark upon your attention, from having often seen patients, of apparently full habits, prostrated by repeated depletion without possessing the means of renovation from the impaired condition of the digestive functions, and the consequent diminished absorption of the nutritious particles of food by the vessels of the stomach and duodenum, on which we chiefly depend for a re-supply of the vital fluid and support of animal vigour. What, then, may we expect to ensue, if the practice of blood-letting be extensively employed with patients of an opposite temperament? In digitalis we have an agent possessing peculiar and adverse powers most applicable to our purpose ; for while it restrains the force of arterial action, and lessens the increased impetus of the blood through the pulmonary vessels, it gives additional energy to the absorbent system generally. I am quite aware that digitalis is going out of fashion

in pulmonary diseases, and I am as fully aware of the cause. It has been given too indiscriminately, which has produced disappointment, and its enthusiastic advocates have expected it to perform impossibilities: a too sanguine friend is a dangerous enemy. But I do maintain, from my own vigilant observation, that digitalis is a safe and valuable auxiliary when judiciously administered;* and among other advantages which we derive from its exhibition, is one of importance,—by controlling the pulse, we are enabled to give, with impunity, additional nourishment, which would be otherwise impracticable; yet I do not mean to deny that cases might occur, where a *high* degree of inflammatory action, *arising from the accession of new symptoms by taking severe cold*, which might sanction depletion; but such urgent symptoms are of very rare occurrence in habits so extenuated; so rare, as not yet to have fallen under my observation in

* When the system is placed under the *actual* influence of digitalis (through the medium of the stomach), it will induce vertigo and occasional nausea, but those inconveniences are avoided by subjecting that useful agent to the absorbent action of the pulmonary vessels.

the course of my attendance upon several hundred patients, who had been visited by acute symptoms, in combination with the chronic affection. Topical bleeding by leeches or cupping, is greatly to be preferred to general bleeding, inasmuch as it does not exhaust the patient's strength to that degree, and then we bring our remedy so much the nearer to the seat of morbid action; a consideration which ought never to be lost sight of; or apply a counter-irritant by blister; or what would be still more effective, from the greater depth of impression, frictions with tartarized antimonial ointment.

While the subject of *Phlebotomy* engages our attention, it may not be irrelevant to bring into discussion hæmorrhages from the lungs or bronchial vessels. The usual practice is to bleed copiously, and give salt by the table spoonsful in America, or nitre, or acetate of lead. To the two first resources, I am opposed: 1st, because the further loss of blood, unless in cases of actual plethora, would add to the patient's exhaustion, which I have several times seen ter-

minate in almost immediate death, where the hæmorrhage had been excessive; and, secondly, because large doses of salt often act powerfully upon the intestinal canal, and of course produce the same effect, in a partial degree, without any reference to the annoyance of such a remedy. But the most serious objection is, that those and other remedies frequently disappoint both the physician and unhappy patient. Without detaining you with a report of the probable *modus operandi* of those tedious and doubtful remedies, I will proceed to communicate my method of treatment in hæmorrhage from the pulmonary organs. The cause of that hæmorrhage is, either a ruptured vessel in the lungs; or, according to Laennec, exudation from the vessels of the bronchial tubes: if from the former, the quantity of blood discharged furnishes us with pretty correct data as to its magnitude. To meet that contingency with the promptness it often requires, I apply a STYPTIC instanter to the mouth of the ruptured vessel, or exuding surface, as the case may be, by INHALATION, and that with as much ease, as well as certainty, and nearly

with equal facility, as I could to a divided vessel upon the external surface; and that styptic would be, in small discharges, calcined alum and gum acaciæ; and in more extensive hæmorrhages, I employ acetate of lead in combination with cinchona, which has never disappointed me *even in a solitary instance*, and that too after the preceding and other remedies had proved unavailing. In my subsequent treatment I use topical tonics, or direct my attention to the healing of the coats of the ruptured vessel by the first intention, and by *direct* application.

I must here offer a solemn precautionary monition by stating, that the rupture of a blood-vessel in the lungs demands more attention and care than the unsuspecting patient usually devotes to his actual condition. The sequilæ is, generally, of more serious consequence than the mere hæmorrhage, be it small or considerable. When the bleeding has ceased, all danger is too often supposed to have vanished; but observation, and fatal experience, prove the delusion, and that frequently when too late

to afford the desired relief under the usual *indirect* methods of treatment. In a large majority of cases an open ulcer remains, and its extent, at first, probably, corresponds with the magnitude of the ruptured vessel: that ulcer will enlarge; others also will be produced by the acrimony of effused blood lodged in the air cells, which will eventually destroy the patient, unless preventive resources be resorted to in time by judicious medical treatment.

In order to illustrate the superior advantages which we derive in such cases, as well as others, from *direct* application to the lungs, I will report and contrast two cases, which, two years ago, came under my observation; both were similarly circumstanced. They had ruptured a vessel, the hæmorrhage had ceased for several months, and both expectorated pus: the only difference in the two cases was, that my patient's hæmorrhage commenced at Charleston, South Carolina, about three years before I was consulted, and had returned several times during that interval; the discharge of pus was

considerable, and his strength so prostrated as to be scarcely able to quit his bed for an hour in the course of the day. The other case was under the superintendence of a professional friend, and commenced about fourteen months previously to my seeing him; he also was much emaciated. By mutual agreement, we visited each other's patients occasionally, which their situation enabled us to do without difficulty. My friend's patient was under general treatment; my patient was inhaling cinchona, myrrh, zinc, and frankincense, by which he was restored to perfect health, and the inhaler returned at the expiration of the seventh week. My friend's patient died within a month after my first visit. It is due to my friend to add that he became a convert to direct application to the lungs by inhalation. A few weeks after my patient had ceased to require medical aid, his friend withdrew his support; and, in consequence, he became an inmate of the almshouse at Philadelphia, where I once called to see him. He informed me that he had availed himself of an opportunity to communicate his case to the physi-

cians of the institution, (being a well-educated and intelligent man,) and on the following day they examined him with the stethoscope, and pronounced the pulmonary organs free from disease. Some months afterward he had an attack of dysentery, which had been, for several weeks, the prevailing disease of the house, from which he had apparently recovered, but a relapse proved fatal to him. By a *post mortem* examination (I have been informed, but I was not present at the dissection), it was ascertained that the left lobe had been very extensively ulcerated, was much diminished in size, and the cicatrix fully and firmly formed. This case affords the most unequivocal illustration of the superior advantages of that treatment which brings the remedy into immediate contact with the diseased organ, as no medicine of any kind was conveyed into the stomach from the commencement to the termination of my attendance.

The fifth and last distinction to which I invited your attention, at my outset was, "Consumption arising from casual causes." That

form of the disease I will now proceed to inquire into, and resume the consideration of the hereditary or constitutional disease after you have become better acquainted with the principles on which I found my theory and recommend the adoption of my practice. That form of pulmonary affection which I at present propose to investigate, may occur at any period of life, either from exudation of the bronchial vessels, the rupture of a blood-vessel in a lobe of the lungs, as already stated, or from inflammation of the covering membrane and parenchyma, when it terminates by suppuration: this may be termed apostematous, and referred to the order of phlegmasiæ.* In such cases, a vomica or vomicas will form in one or both lobes, and their magnitude will depend, perhaps, upon the force of the exciting cause, or on the delicate or plethoric habit of the patient. Should the vomica be large, suffocation may ensue at the period of its rupture, from the diameter of the bronchial tubes being too limited to discharge

* Vide my "Treatise on the Diagnosis and Prognosis of Diseases," published by Johnson.

instantly the quantity of purulent fluid presented to them; or, if comparatively small, the open excavation may (from long-continued discharge), and often do, destroy the patient under any method of treatment conducted through the indirect and doubtful medium of the stomach. As well might we say, pour medicine into the stomach to cure a ruptured abscess on any part of the external surface, induced by local inflammatory action, and quite distinct from any constitutional cause, than which nothing could be more preposterous to a reflecting mind.* Upon those critical occasions, however, it is very consolatory to know that such an unhappy result can be averted, even under the most inauspicious circumstances, as the three subsequent cases will fully demonstrate. They are selected from a number of others, equally fortunate in their termination,

* Among the *occasional* causes of Consumption, we may add certain occupations; namely, engravers, the pointers of pins and needles, stone cutters, manufacturers of tobacco, shoemakers (from the position in which they work), and those persons who attend the machine called a Gin, employed in separating the cotton wool from the seed, as well as persons who inhale pungent vapours in chemical manufactories, &c. &c.

although less terrific in prospective. The first occurred in Ireland about thirteen years ago ; the second, at Philadelphia, four years since ; and the third, at New York, of recent date.

The first case was that of a gentleman, Mr. B., whose indulgence in the too free use of ardent spirits, for a series of years, had predisposed his liver to disease. In consequence of having taken a severe cold, that organ became the seat of acute inflammation, which communicated to the right lung : both suppurated, and the contents of the abscesses were discharged several hours before my first visit, as he resided at the distance of several miles. The lapse of time can never efface from my memory that awful visitation of Providence ! The patient's house, before my arrival, had become so truly offensive, that the entire family were obliged to remove to a neighbouring dwelling, and the miserable gentleman was confided to the care of one of his cottage tenants. I felt greatly oppressed in approaching his chamber ; and when I observed his appearance, and, at least, three quarts of

purulent matter in two utensils, I had no hesitation in declaring the case to be beyond the reach of human aid, and I quitted the unhappy patient without prescribing. In reflecting upon the truly deplorable condition of the forlorn sufferer, on my return home, I felt with full force and deep regret the poverty of our resources to meet so desperate a case with any, even the most remote, prospect of success. Medicine conveyed into the stomach offered no ray of hope, and consequently was not resorted to.

From time immemorial it has been the uniform practice of the intelligent physician, in all diseases, and in every country, to bring his remedies, as nearly as he can, to the seat of morbid action; and I had long considered it very extraordinary and unexplained, why the lungs alone, with such facilities of communication, should be exempted from the operation of so judicious a principle. From this reproach I must in truth and justice exonerate the late Dr. Beddoes and Dr. Thornton; but their factitious gases were inadequate to the accomplishment

of their humane views: we must, nevertheless, award them the merit of pointing out the *channel* by which their object can be attained, although by different agents. After mature deliberation I considered this hopeless case a favourable opportunity for trying an experiment, and I gladly availed myself of it, as my professional character could not suffer by disappointment, or, I should rather say, by defeat, for I had very little to expect. Before I had reached my destination I had made arrangements in my mind for conveying, *direct to the lungs*, a composition of cinchona, myrrh, and zinc, by means of an apparatus which I had forthwith constructed, but, from the delays of the workmen, I could not reach the patient's house until past midnight. I then explained the motive of my unexpected visit, and assured him that the experiment I suggested would neither hasten the anticipated and fatal event, or subject him to any pain or inconvenience, as I had previously tried it upon myself; but that I could promise nothing satisfactory, as it was altogether a new experiment.

I will here observe, and you will have the goodness to remember, that every agent which I subsequently employed in chronic disease of the pulmonary organs, had been repeatedly subjected to the test of experiment upon my own lungs, before it was exhibited to any patient. In returning to my subject, I have to state, that Mr. B. readily acquiesced, and we commenced our operations without any delay. After the third inhalation of four inspirations at each time, at intervals of half an hour, he informed me that the *taste* of what he expectorated was not so offensive to him; that agreeable change, small as it was, encouraged us both to proceed with diligence during the remainder of the night, and, by eight o' clock in the morning, he became sanguine that he should recover, as neither the taste or smell of what he spit up was then offensive to him, nor quite so much in quantity. I took my leave of him, with a promise to return the following morning if I did not hear of him by an early hour, for I still considered his surviving twenty hours a matter of

uncertainty from his state of exhaustion. No messenger having arrived at six o' clock, I proceeded on my journey, and to my great joy I found my patient in a much more promising state than I could possibly have anticipated: the quantity of expectorated matter had diminished considerably; he had taken sufficient nourishment, slept some hours, and had been very punctual in the use of his inhaler. I have, perhaps, trespassed too long upon your patience in relating the circumstances of this most interesting case to enter further into detail; I will therefore close my report by stating, that Mr. B. was in his forty-sixth year, and that he returned the inhaler on the twenty-third day from my first visit, being restored to perfect health. It may not be irrelevant to observe, that the only medicine conveyed into the stomach in the course of his recovery was two doses of castor oil. In this case we have a remarkable example of visceral organs sympathising with each other in their progress to health, as well as participating in diseased action. The history of this eventful case proves the fallibility of medical

records and academie precepts, and must recal to the recollection of my senior brethren periods in their professional lives when they were left alone to their own resources upon the most critical emergencies.

The second case to which I wish to invite your attention is that of Mrs. S., the daughter of a Norfolk farmer, residing in Second street, at Philadelphia. She had taken cold, and had had a troublesome cough for some weeks, but being a woman of robust habit, she disregarded it; at length she suddenly discharged about a pint of pus at a coughing effort: the event alarmed her greatly, and I was immediately called upon to visit her. In this case also, without entering into its minutiae, I had recourse to inhalation, as in the preceding case, with some variation in the agents employed. She likewise was restored to perfect health, and I discontinued my visits on the nineteenth day. This lady was in her eighth month of pregnaney; her accouehement took place twelve days after my last visit; and both mother and child have con-

tinued free from any pulmonary affection ; the child, however, has had, since her birth, an obstinate herpetic disease, which has not yielded to the usual remedies.

The third and last case is that of Henry Foster, of Birmingham street, New York. Although poor, he is valuable to those who know him best for the excellence of his moral character : he lately handed to me a report of his own case, drawn up by himself, which I will subjoin in a note below.* On the 8th of August, 1824,

* "In the spring of 1810 I had the small-pox in the natural way, and when scarcely recovered from the dangers of this disorder, I had a relapse, attended with violent fever ; but I do not recollect having any cough until the fall of the same year, which was a dry kind of cough. In the course of the year 1811 I had frequent ill turns, one in the winter, which confined me to my bed for some weeks ; I had the cough, but I do not remember whether I raised any thing at this time or not. In the spring or summer of 1812, while in school, I raised by coughing about half a gill of dark thick blood, which came up very easy. I expect from this time that I have continued to raise a little more by degrees until the winter of the same year, when I was again confined to bed for two or three weeks, and my life almost despaired of, trying many prescriptions without deriving any benefit from

it appears he became my patient. At my first visit, from the state he himself describes, I declined taking charge of him, as I considered it

them. I however got better again, and in the spring of 1813 I went to New Jersey, where I remained during the summer; in the course of which time I gained considerable flesh, and I think the quantity had diminished. In the fall of the year I returned to New York, and from this time it has gradually increased as I grew up, and has been growing on me, instead of out-growing it, as several physieians had, in its earlier state, given as their opinion I would do. In the years following I do not recollect anything worthy of mention, more than from this time I was able to attend to my daily oecupation until the year 1819, when I was much debilitated, and although I did not keep my bed, yet I was so weak and feeble I could seareely walk. From this year, 1819, my disorder has been growing worse; that is, I have continued to raise more from year to year, although I have been able to attend to my business the whole of the time, execept when I took a cold, which I was sure to do every spring and fall, when I would be confined to bed for a week or two; and although I would lose flesh and strength, I could almost as soon make it up again. In the fall of 1823 I was again confined to bed for two weeks, and was very much reduced in this short time. In the course of the winter I gained ten or twelve pounds of flesh, although I raised more than I ever did before. In the spring of 1824 I took another cold and was confined to bed for two weeks: of course I lost some that I had been gaining during the winter. After the sickness, which was in March, I gained flesh, although I felt very bad during the time, which might have been caused by the drugs I had taken, prescribed by a physician who had undertaken to cure me. But, on the 18th of April, I received a very heavy blow on the back between the

altogether a lost case ; yet, at the urgent solicitation of his disconsolate parents and sister, I agreed to try the effect of direct applications to

shoulders ; and though I had experienced some pain in the right side previous to the blow being given, yet the pain in the shoulders and side was very much increased during the day, and continued until 10 P.M., when it had increased so much as to become alarming, and a physician was sent for, who bled me, which gave me no relief ; and the pain continuing, I could not lay down, but was bolstered up with pillows during the remainder part of the night. I had a violent fever, which abated some during the succeeding day ; and on the day following electricity was tried with as little effect as all other remedies. Blistering was next tried with as little effect. Six weeks had now elapsed, and under the medical treatment I received I daily grew worse. I had from this time a gathering in the right side, which, as it grew larger, advanced up towards my shoulder, it broke inwardly, and proved to be an abscess of the liver, and discharged itself through the right lung. The quantity of matter discharged from it at several times was about one pint in all, and of very disagreeable smell. Although I was relieved after it had completely discharged, yet I had been so long confined, and so much reduced, that I was scarce able to walk across the room, and in few days was almost as bad as ever, the pain increasing across my breast, particularly in the right side. In July I was given up by my physicians and friends, being reduced to a mere skeleton, raising in the course of twenty-four hours about half a pint of matter daily. I had been from the time of my confinement growing worse, suffering the most excruciating pain in my breast and sides until the 8th of August, when Dr. Myddelton visited me."

the lungs by inhalation: the result has been, contrary to my expectation, most favourable; and I left him on the 20th of May not only convalescent, but able to walk several miles in the day and resume his situation in a grocery store, where his value is duly estimated.*

You must have observed that the first case of the last three which I have reported, was the *origin* of my treatment of chronic pulmonary disease by *direct* application to the diseased organs. The almost miraculous termination of that case produced a new train of reflections and engaged my most ardent attention: while a reconsideration of the momentous subject, from day to day, and week to week, inspired me with confidence; yet a modification of the same reflections involved me in embarrassment. It is true I could have continued to glide on the sur-

* In this case it would appear, from Foster's statement, that a predisposition to constitutional pulmonary disease existed in the system, and that the virus of variola became the exciting cause of its developement. The subsequent symptoms were apparently induced by the violence offered to parts contiguous to, and acting upon, glands predisposed to inflammatory action.

face of the unruffled stream of general and inefficient practice without risking professional character, or exciting the hostility of the superficial observer; but on reviewing the circumstances, as well as the happy and highly gratifying result of that most extraordinary case,—could the concealment of such a fact, or the abandonment of the means employed, be reconcilable to the dictates of humanity, or comport with professional rectitude? On the other hand, if I raised my feeble voice, in the evening of life, to stem the fatal torrent which ages had sanctioned, obloquy in the first instance, and controversy in the second, I considered my inevitable doom, as the common fate of new systems, however correct in principle or succesful in practice.* Yet a conscientious feeling of professional duty, at length, governed my decision, by adopting the more responsible alternative. Hence it became necessary, as a preliminary resolve, to surrender my attachment to all former theories, and then enter the field of inquiry *de novo*. By this de-

* In those anticipations, I gladly confess, I have hitherto been most agreeably disappointed.

termination, I am quite aware that my future days may be required to defend a system erected upon the broad basis of reason and of truth, and I readily submit to the sacrifice, (if sacrifice it can be called,) when the lives of our fellow creatures are in jeopardy, and those lives too the very flowers and hopes of our population.

Having emancipated myself from, perhaps, the prejudices of early imbibed impressions, I had now to seek a new guide. The defective physiology of the pulmonary organs was the ground I had selected to explore. 1st, to ascertain if the lungs possessed the inherent power of absorbing that which is not gaseous; and 2dly, to what extent that absorbent function could be exerted, both upon solids and fluids; as a correct solution of those physiological questions, would either prostrate my legitimate hopes, or establish my theory upon an imperishable basis.

To obtain this information, so essential to my future views, I instituted an arranged series of experiments, which were repeated and varied

upon different animals, such as sheep, lambs, calves, dogs, and cats, by injecting aqueous coloured fluids, and conveying coloured substances, to the lungs. The former through an opening made in the trachea, and the latter with an instrument constructed for the purpose by inhalation. The result of my first series of experiments proved much more satisfactory and conclusive than I had contemplated, and on which I subsequently acted with less restraint. Having ascertained, to the full extent of my wishes, and much beyond my most sanguine expectation, the ample absorbent power of the lungs, my next consideration was the selection of remedial agents to subject to their action. In prosecuting that inquiry, I resorted both to the vegetable and the mineral kingdoms; but not a particle of mercury, in any form, ever entered into my views, and analogy aided me in my choice. At first each agent, by itself, was subjected to the test of experiment upon my own lungs by inhalation, and its sensible effect noted at what period it commenced, and when it ceased. Subsequent experiments, by combining two,

three, or more agents, were subjected to similar operations, and the results accurately observed, which led me to correct data in the practical department of my inquiry in reference to the relative proportion of the different agents in combination for the arrangement of formulæ adapted to the different stages of disease and occasional contingencies.

Since my experiments were made to ascertain the absorbent function of the lungs, the inquiry has been successfully prosecuted by Professor Mayer, of Bern, in Switzerland, upon several other smaller animals, and upon a more extended scale *with fluids only*, without however applying the knowledge he thus acquired to any therapeutic object. From deference to such high authority, I shall, upon this occasion, give you his illustrations in preference to my own, which I have reserved for my systematic work, presuming that they may be more satisfactory in the present state of so vital a question than a detail of my own researches upon a subject which has, almost exclusively,

occupied my attention for many years. That learned physiologist informs us that his last series of experiments were eighty in number; that he performed analagous experiments on the absorption FROM THE STOMACH AND INTES-TINES, and that he found it to be MUCH LESS THAN FROM THE LUNGS. He made those experiments on various animals—rabbits, dogs, bats, hedge-hogs, goats, &c. He performed them with different coloured fluids, with the infusions of turmeric, of rhubarb, of saffron, of indigo, of madder, &c. He frequently made use of a mixture of indigo, of saffron, and of water. He also employed solutions of the prussiate of potass, of nitre, of alum, of acetate of lead, muriate of iron, oxyd, of arsenic, oils, &c.

The following are the summary results of his experiments:

1st. Animals support a considerable quantity of liquid injected into the lungs without experiencing mortal symptoms from them; rabbits can support a dose of four ounces and a half of fluid

in twenty-four hours. The lungs of a sheep, in one of my own experiments, absorbed nearly thirteen ounces of coloured fluid within the same period, with results similar to those observed by Professor Mayer; but those experiments, "by injection" says the learned Professor, of which I had been early apprised, "should be performed by an opening made in the trachea; for if we inject fluids by the larynx, they excite the most severe symptoms of suffocation, and the animal soon sinks under it."*—2d. The symptoms of suffocation which arise from injection are not serious when we inject pure water, but they become so when we inject thick fluids; for example, oil, which obstructs the aërial passages, or some chemical solutions, which, by destroying the parenchyma, or substance of the lungs, prevent the oxydation of the blood, and produce extravasations of blood, and inflammation of the lobes of the lungs.—3d. The fluids and solutions injected into the lungs are absorbed, more or less quickly, according to their nature and degree of

* Similar to the spasmodic action familiarly termed "a bit or a drop going the wrong way."

concentration.—4th. This absorption is, in general, very great; but less in young and newly born animals than in adults.—5th. Absorption takes place by the pulmonary veins, for it has occurred in the space of three minutes. We find in the blood the fluids injected before we can perceive them in the chyle: we find them in the left auricle and ventricle of the heart long before we can see the least trace of them in the right auricle; and, lastly, absorption is carried on even although we tie the thoracic duct.—6th. Absorption is performed also by the lymphatic vessels, but *more slowly*.—7th. The veins of the stomach and intestines likewise absorb, but *in much smaller quantities than the pulmonary veins*.—8th. We can demonstrate in the blood the existence of fluids absorbed by the veins. It is easy to discover there the prussiate potass, the muriate of iron, arsenic, &c. We can trace the prussiate of potass injected into the lungs, first in the arterial blood of the heart and arteries, then, if we continue the injection, in the venous blood. The sulphate or muriate of iron mixed with the blood produces a blue or green precipi-

tate.—9th. We find these fluids in abundance in the urine of the bladder, and in that of the kidneys. The prussiate of potass can be discovered in it seven minutes after the injection.—10th. The prussiate of potass is likewise deposited, and even in considerable quantity, in the serum of the pericardium, of the pleura, of the peritonæum, in the synovia, under the skin, and in the milk.—11th. When we have injected the prussiate of potass, we can discover this substance, after some hours, not only in the fluids, but also in many of the solids: several of these parts then become green or blue with the muriate of iron, viz. the cellular tissue under the skin and in the whole body, the fat, the serous and fibrous membranes. We can tinge in green or blue, by the solutions of iron, all the aponeurosis of the muscles, tendons, and the lateral and inferior ligaments of articulations: For example, the circular ligament in the ileo-femoral articulation, and the crucial ligaments in the femero-tibial articulation. We find the other parts of the fibrous system in the same state, namely, the dura mater, the periosteum, and the pericardium,

&c.—12th. The membranes of arteries and veins, even the valves of the heart, can be entirely coloured blue. The mitral valve in the left ventricle alone becomes blue when we do not continue our injection long enough.—13th. The parenchyma of the liver and spleen cannot be coloured blue, but sometimes the cellular tissue around their great vessels. The lungs, the heart, and the kidneys, can be coloured blue.—14th. The secretory glands, namely, the salivary gland, the pancreas, and the mammæ, become blue.—15th. Neither the substance of the bones or the marrow become blue.—16th. The substance of the muscles, and that of the nerves of the brain, and of the spinal marrow, do not change their colour even by soaking with the muriate of iron. These organs appear to exert a repulsive and exclusive force on the contact of fluids foreign to their nutrition.

We may conclude from this that the opinions of many physiologists, who say that poisons act mortally when they are applied to parts of the nervous system, are not well founded, and are devoid of direct proofs.

Further experiments have confirmed the absorbent power of the lungs TO A MUCH GREATER EXTENT, but as those results are irrelevant to our present views, I will not detain you with a protracted detail; yet I ought not omit a recent experiment of Mons. Fodera, in corroboration of the celerity with which absorption is carried on BY THE PULMONARY VESSELS. He injected prussiate of potass into the trachea of a rabbit, and cut out the heart as soon after as possible: the operation was performed in twenty seconds; and notwithstanding the shortness of the time, the interior of the left auricle was stained of a greenish blue colour, was deeper in the mitral valve, and less apparent, although still perceptible in the aorta. Similar results have been also observed by that accurate and indefatigable physiologist, Majendie.*

We have here cited the conclusive evidence of an eminent professor, supported by the con-

* The sanguiferous veins are endowed with the absorbent faculty. IT IS NOT DEMONSTRATED THAT THE VESSELS WHICH ABSORB THE CHYLE CAN ABSORB OTHER MATTERS.

current testimony of two other distinguished physiologists, as well as by the late experiments of the lamented Dr. Laurence and Dr. Coates, of Philadelphia, in confirmation of a new physiological fact; namely, THAT THE LUNGS DO POSSESS THE INHERENT POWER OF ABSORPTION BY MEANS OF THE PULMONARY VEINS, AND THAT THE ABSORBED FLUID IS DIFFUSED NOT ONLY THROUGH THE CIRCULATING SYSTEM GENERALLY, BUT IS ALSO VISIBLE IN VARIOUS CELLULAR TISSUES; AND THAT THE PULMONARY VEINS ARE ENDOWED WITH A GREATER DEGREE OF ABSORBENT ENERGY THAN THE LYMPHATICS; and, consequently, THAT THE STOMACH AND INTESTINES OFFER LESS FACILITIES IN THE PROCESS OF ABSORPTION THAN THE LUNGS: whether this excess of absorbent action in the pulmonary organs, beyond that of any of the chylo-poietic viscera, be owing to the direct influence of atmospheric oxygen, or to the peculiar spongy texture of the lungs, or to their incessant expansion and collapse in respiration, will be a subject of new inquiry and of future discussion.

The establishment of that most important

discovery in physiology, THE ABSORBENT POWER OF THE LUNGS, verified by such unquestionable authorities, and leaving my own experiments tending to the same conclusion at present in the back ground, constitutes the leading feature of my theory, and satisfactorily accounts for the success of my practice, aided as it is by other obvious considerations which claim our serious and undivided attention.

When the lungs are invaded by disease, other visceral organs sympathise with them, and we may safely infer, without danger of contradiction, that their several secretions undergo a morbid change; hence, then, medicine taken into the stomach has first to encounter a vitiated gastric secretion; it subsequently descends into the duodenum, it there comes in contact with the hepatic and pancreatic secretions; these may be too abundant, or too small, in quantity, and their QUALITY so altered by decomposition, or chemical affinities, in the animal laboratory, as to render them either too stimulant or too inert for a due performance of their appropriate functions, on

which we depend for absorbent action, and by which alone can any remedial agent reach the lungs through the medium of the blood. From this view of the question, then, (and it is a correct one) it is manifest that any medicine conveyed into the stomach cannot act with any degree of certainty; but, on the contrary, must be exposed to as many perils as a dismasted vessel on a troubled ocean under the guidance of an unskilful pilot. If, however, we take a more comprehensive view of our subject, we shall readily perceive that a comparatively safe port is open to receive and protect us from the impending storm; but to avoid the vexatious shoals of disappointment, we must change our pilot, or, in other words, by changing the *channel* through which we introduce our remedies into the system from the æsophagus to the trachea, we secure the *only* probable retreat by which we can reasonably expect to escape premature death: the former is circuitous, and, to say the least of it, very doubtful indeed; the latter is direct, and cannot deceive us, unless the habit be greatly extenuated,

and the system so prostrate as to be left without the power of reaction.

The experiments which I have offered to your consideration afford abundant evidence that we may repose *implicit confidence* in the absorbent power of the lungs, as being *much more energetic* than that of the veins and lymphatics of the stomach and intestines, without incurring the risk, or, I ought rather say, the absolute certainty of meeting with three vitiated secretions capable of defeating our object. I wish it, however, to be distinctly understood, that I am neither so arrogant, or yet so absurd, as to aspire to infallibility, by asserting that all pulmonary cases are curable by the means which I recommend: such folly I disclaim, because I know, and greatly lament, that pulmonary cases have occurred, and may again recur, either alone, or in combination with other visceral disease, which, in the *advanced stage*, may render all our efforts abortive. But I do mean to say and declare, that such results, in the

incipient or tuberculous stage of pulmonary consumption, or before a state of actual exhaustion has taken place in the ulcerative stage, are of very rare occurrence; so much so, that I have lost two patients only, under such circumstances, since I have adopted *direct* communication with the diseased organs. But on the contrary, I can assert with that confidence which truth inspires, that many, very many patients have been restored to perfect health, whose cases had been previously considered quite hopeless, and that with good reason, under any method of treatment conducted through the medium of the stomach.

It is due to the practice which I recommend to state, that during the last ten months I resided at New York, I lost only three patients, although the number averaged thirty-seven, including distant patients.* Nevertheless, I am quite aware

* Several of those patients were brought to me from very remote sections of the Union, some of whom came several hundred miles, and were from two to four weeks on their journeys; who, after continuing under my medical manage-

that fatal terminations might occur under peculiar circumstances; but even then a few unfortunate results, however relatively afflicting, ought not to suspend the adoption of a rational practice in a disease which has hitherto resisted all other modes of treatment, for had hostile feelings prevailed in former days to the exclusion of new resources, the natural small pox would still have ravaged the world, and living millions would have been offered up as unconscious sacrifices on the unholy altar of prejudice. All I contend for, and that from conviction I will contend for, is the superior, the abundantly superior advantages which we derive from *direct* communication with diseased lungs, by which at least the majority of pulmonary patients may be saved, who would otherwise, in all human probability, sink into premature graves. I must, however, re-

ment a few weeks, were enabled to return home at the rate of from 50 to 80 miles a day without inconvenience, as my subsequent correspondence with the parties will shew. Others, however, I was under the necessity of recommending to remove without delay into the interior of the country, beyond the influence of a marine atmosphere, which evidently increased the more urgent symptoms.

mark, that in all chronic diseases, more especially in those of the lungs, from their constitutional character and insidious advance, patience is indispensable on the part of the patient, and perseverance on that of the physician, to assure a favorable result: as the former may, in some cases, despond, if early cure be not obtained, so it is the duty of the latter to support his patient's mind by pointing out the improbability of promptly subduing a disease of long duration. It is true I have been sometimes (and in two cases of distant patients whom I visited a few weeks before I embarked from New York) most agreeably surprised in finding the disease yield much sooner than I could possibly have anticipated; the one I discharged cured on the seventeenth day, and the other on the twenty-third, but those very fortunate cases seldom occur, and ought not to be expected; yet we have a gratifying and consoling compromise to offer both to the patient and his friends—early relief, if not an early cure.

In corroboration of the sanative effect of

direct communication with diseased lungs by inhalation, I gladly avail myself of information which I have received from a most worthy man (of the Society of Friends) and highly respectable physician, at Philadelphia, to shew that observation may and occasionally will accomplish what the pride of science might at the first glance reject. An intelligent farmer of Lancaster county, Pennsylvania, recommended a man in his neighbourhood labouring under pulmonary consumption in its advanced stage, to follow the horse in a tanner's bark mill: he did so, and was cured, doubtless by inhaling the fine particles of bark floating in the atmosphere of the house which enclosed the mill. The same farmer, he also assured me, protects himself from the prevailing intermittent and remittent fevers of that section of country by inhaling the powder of yellow bark. To what, I would ask, can we attribute those happy results? The obvious reply would be, to pulmonary absorption by *direct* application to those organs.

From the general tenor of my remarks you

must have observed, that I have transferred much of my confidence from the absorbent vessels of the stomach and intestines to those of the lungs in the treatment of chronic disease of those organs. The experiments which have been reported, and the authorities which have been cited, as well as the practical results which I have so long and so often observed, fully justify that change of opinion; and I feel persuaded that the more you reflect upon the subject, in all its bearings, the more you will be satisfied of the rationale of the theory which I advocate, and the practice which I shall continue to adopt, from principle, to the end of my days. Nor ought I to omit an acknowledgment of the gratification I feel that several of the most eminent physicians in the United States have, from the mass of evidence which I have adduced, become converts to a system which it has fallen to my lot to originate.

A medical friend at New York lately suggested to me, that the idea of conveying substances to the lungs by inhalation had occurred

to the late Dr. Darwin, and referred me to the second volume of *Zoonomia*, which he handed to me. I there found that Dr. D. had tried the experiment in *one* case only, without any allusion to the absorbent function of the lungs, which, indeed, at that period had not been ascertained, or even contemplated, and on which the superstructure of my theory is founded. It further appears that another opportunity of repeating the experiment had not occurred in the practice of that distinguished physician and accomplished scholar. After the ample experience of twelve years of the success of treating pulmonary consumption, by the inhalation of *substances*, reduced to impalpable powder, I am conscious of being liable to censure for having so long confined the benefits resulting from the practice within the sphere of my own immediate circle; and the only apology I can offer for such an apparent dereliction of professional duty is, the reluctance, the very great reluctance which I have uniformly felt to oppose high authorities which I had long venerated, and the opinions of teachers which I had embraced with confi-

dence, and whose memories I revere as the guides and friends of my early days; and even at this period, I should, perhaps, hesitate to promulgate my opinions were the disease less fatal, were the usual treatment less objectionable, and were I less conscious that my earthly career is drawing to a close in the common course of human events.* When ulcers exist in the lungs of hereditary sufferers, or of those who acquire the disease by communication, we must calculate upon the presence of tubercles also; and, in the treatment, we must keep two objects in constant view—1st, that of cicatrizing those

* I had been, during the last year, endeavouring to separate myself from that country in which both my theory and the practice which I recommend was matured, for I could never lose sight of the paramount claims of my native and afflicted country, where I find fifty-five thousand now die annually of consumption, being an augmentation of one third beyond former periods!—Nor could I, at length, have resisted the most flattering entreaties, had I not determined to decline attendance upon any new patient at New York after the 1st of January, to enable me to visit the principal cities of the Atlantic States to promulgate my doctrines, by Public Lectures, gratuitously, to my Professional Brethren and Citizens generally, as a grateful return for their confidence and hospitalities.

ulcers by exciting the adhesive inflammatory action; and, 2dly, that of discussing those tubercles which still remain in a latent state. And however extraordinary it may appear to my professional brethren, I am in possession of unequivocal testimonials in proof of the practicability of accomplishing those most important objects. The first indication is, however, strongly opposed, not only by the incessant motion of the lungs in respiration, but also by a powerful agent very hostile to the granulating process even of external ulcers, from which they are sedulously secluded in the renewal of applications; but that resource is denied us in excavation of the lungs. OXYGEN, the basis of all acids, is the agent to which I allude: it is, as you all know, the vital principle, and one of the component parts, of atmospheric air, and constitutes about one fourth of its volume; and the colder the air the greater proportion of oxygen it contains, and *vice versa*. A medium temperature then, say 65 or 66, is the most favourable state of atmospheric air which consumptive patients can inspire; and even that may be improved by reducing its

quantity of oxygen in the patient's chamber. In that case, he would respire with greater ease; but when the thermometer RANGES ABOVE 80, PULMONARY PATIENTS BECOME OPPRESSED, AND THEIR STRENGTH MUCH PROSTRATED.* It thence appears that, at each inspiration, we admit to ulcerated lungs, and that in such large quantities, an agent, which not only impedes the healing process, but, by its peculiar action upon the pus, extends the existing ulceration: although it is, as I have already observed, the vital principle in the œconomy of all organized matter, both animal and vegetable. I have made considerable progress toward counteracting its pernicious agency upon ulcers in the lungs; and I am still engaged in prosecuting that important inquiry by diversified experiment, so as not to interfere with its action on the blood by its chemical attraction through the membranes of the aërial passages. Should I succeed in obtaining that most important desideratum, which I have rea-

* Should the atmosphere of the patient's apartment approach 70°, he would be liable to be visited by *acute* symptoms on exposure to an atmosphere of much lower temperature, even with precautions; hence the danger of over-heated rooms to pulmonary patients.

son to anticipate, Pulmonary Consumption, *even in its advanced stage*, will be disarmed of many of those terrors which have hitherto surrounded it. In the interim, however, I am fully persuaded that we derive considerable advantage, mechanically, by covering the bare surface of ulcers in the lungs, immediately after copious expectoration, with a finely pulverized substance, which must greatly limit the action of atmospheric oxygen, without dwelling upon the sanative properties of the remedy employed. “Although
 “the action of oxygen is so extremely hostile to
 “the healing of ulcers, yet, in combination with
 “metals, its stimulus in that state facilitates the
 “granulating process by promoting absorption,
 “the metallic oxyds not being liable to decomposition by contact with animal matter; and consequently no new acid can be produced to vitiate
 “the quality of the pus.”

With reference to the capability of discussing tuberculous indurations, I must not only remind you of the proofs which have been adduced in support of pulmonary absorption, but also,

that other glandular tumours of *corresponding character*, and of much greater magnitude, differently situated, have been removed by the agents which will be hereafter designated, and which were never before submitted to the absorbent action of the pulmonary vessels. In the medical treatment of chronic disease of the lungs, we must be governed by the actual state of the patient. After minute inquiry, and due reflection, we must ascertain, as a *sine quâ non*, 1st, Whether the disease be merely an affection of the larynx or mucous membrane of the bronchial tubes.—2d, Whether tubercles exist alone, or in combination with open ulcers.—3d, Should the lungs be actually ulcerated, we must learn what quantity of purulent matter be discharged within a given period, and if it be intermixed with blood.—4th, The condition of the digestive organs and portal system.—5th, Whether the digestive organs be the *primary* disease, and the pulmonary affection a *sympathetic* derangement of those organs only. And, lastly, although not least to be regarded, the quantum of animal vigour which still remains.

A discriminating view of those objects will regulate our medical management of the disease, and aid us in forming a correct prognosis. You will likewise remember, that the mildness or force of hectic fever will be a prominent guide in drawing your conclusions; because I apprehend the very existence of hectic fever, so different from all other types of fever in its leading characteristics, depends upon the absorption of pus entering the mass of circulating fluids. If, then, the pus be well-conditioned, the hectic fever will be moderate; but if the separation from the excavations be an ichorous matter, *hectica exquisita* will supervene, and the pulse will beat perhaps 130 strokes in the minute, and the sense of local heat will be proportionally augmented: and, indeed, the same phenomena may be observed from the absorption of ill-conditioned pus by the valvular lymphatics, separated from ulcers in other parts of the body, and thus introduced into the mass of blood.*

* Dr. Gorham, of Boston, reports a case, in the *New England Journal of Medicine and Surgery* for October 1823, of *Phthisis Pulmonalis*, attended with a tuberculous state of the larynx and pharynx, as well as of the lungs extensively,

I have long been impressed with the belief that the uniformity of treatment which too often obtains in chronic disease of the lungs is, at least, injudicious. Depletion and low diet are, very properly, recommended in the incipient or inflammatory stage; but the great error in the usual practice is, its continuance during the advanced or chronic stage, under the impression, I presume, of counteracting the suppurative process of other tubercles, without once attending to those co-existent ulcers which discharge pus, and sometimes calcareous concretions. This practice, surely, cannot be justified upon any rational principle. In other chronic diseases, where there is little or no excitement, we endeavour to support our patient's strength, to enable him to contend with his adversary. Ought we not, then, adopt similar precautions in a disease which commits such regular and progressive ravages upon the animal functions of its feeble victims? From long-continued observation, I

in which symptoms of the hectic fever were wholly absent; but it does not appear that any of those tubercles had progressed to the suppurative stage.

can state with confidence, that consumptive patients oftener die of exhaustion than of the organic disease, and that premature exhaustion is doubtless the effect of depletion and low diet: for you all must have observed the early appearance of emaciation and loss of muscular vigour; the first, from the removal of fat by the valvular lymphathic absorbents, and the latter by absorption from the muscles. In some cases we find the *membrana adiposa* first give up its deposits; in others, the absorption is greater from the muscles: but in general those absorbent vessels act simultaneously; hence the diminished volume and weight of the body, and loss of muscular vigour, are observable in a corresponding ratio. The want of energy also in the circulating system is manifested by the paucity of red blood in the extreme vessels, demonstrated not only by the paleness of the countenance, but by the paleness of the general surface, as well as the change exhibited in the *tunica adnata* of the eye. In a state of health we see red vessels distributed on its surface, but in the advanced stage of phthisis they disappear, and the *adnata* assumes

a pearly colour, and at length the whole eye looks glassy. I have likewise seen cases in which a total loss of vision took place one, and even two days, before death : and to a want of energy, and consequent loss of local nourishment, we may attribute the falling off of the hairs, and the adunque or crooked form of the nails, so remarkable in the last stage of phthisis. To the existing debility we may, in continuation, ascribe those aphtous appearances, at once so distressing to the unhappy patient, and so indicative to the physician of approaching dissolution. Debility is also often prematurely induced by confining patients to their beds, to which I am very much opposed, from its exciting the exhalents of the skin to increased and undue action. We should rather encourage him to quit his bed; and, when fatigue approaches, let him recline on a sofa. Were it necessary to enforce this precept by example, I would ask, What would be the condition of a robust man in full health, were he confined to his bed for one solitary week only? Argument is not requisite to prove that which is self-evident. Should the patient be greatly

exhausted, and the quantity of expectorated matter considerable, the general system must be supported by tonics, somewhat stimulant, as auxiliaries to nutritious diet and topical application by inhalation; otherwise the patient will sink rapidly: but, should the animal functions retain a sufficient portion of original vigour, we may confide wholly in the use of direct application to the diseased organs, with nutritious but not stimulating diet, accompanied with gentle exercise, so as not to induce fatigue, and consequent exhaustion. Should cough be troublesome, and interrupt necessary repose, any of the demulcents of the materia medica, in combination with an occasional opiate, would be useful adjuvants. In the event of distressing night perspirations, some of the covering should be removed at the commencement, and acetate of lead, or sulphuric acid, may be given in cautious doses: and should colliquative diarrhœa supervene, it must be suspended by the usual astringents, until the cause be removed by *direct* means. When an irritating cough harasses the patient, I have found prussic acid, in a thin mucilage of gum acaciæ,

or lactucarium, the best sedative. In chronic disease of the pulmonary organs, the digestive functions are generally deranged, even when they are not the primary cause of pulmonary disease.* In those cases, I am in the habit of recommending secondary tonics, as the infusions of colombo, of quassia, gentian or chamomile, in lime-water, or in combination with subcarbonate of ammonia; and when accompanied with hepatic congestion, *in the incipient stage*, small doses of blue pill and extract of dandelion, given daily, seldom fail to remove the obstruction, and induce a healthy secretion of bile. I must, however, observe, that when an *old* hepatic affection is combined with chronic pulmonary disease, *in its advanced stage*, our prognosis would be unfavourable; and I have too often seen that even the most cautious doses of mercury, administered with the view of relieving the chronic disease of

* It is greatly to be lamented that, heretofore, in the general treatment of incipient *constitutional* phthisis, too little attention seems to have been directed to the actual condition of the *primæ viæ*, as well as to the cuticular and alvine excretions, on which so much depends, under any rational view we take of the subject.

the liver, aggravate the pulmonary symptoms, as well as prostrate the animal functions. In consequence of those untoward results, I have for sometime discontinued the use of mercury in any form; and in those old combined cases, I have since given nitric acid, and extract of dandelion and chamomile, with evident advantage. Those cases, then, which have been reported from time to time of the successful exhibition of mercury in phthisis pulmonalis, must, I apprehend, have partaken more of the hepatic than pulmonic character.

The lungs, in the constitutional disease, as I have already stated, may be tuberculated only, or combined with ulceration, either extensively or in a limited degree; and it is of the utmost importance to designate those stages with accuracy to assure the patient's recovery. Should the lungs be tuberculated only, the inhaler should be charged with calcined sponge, the leaves of conii and vervain, sarsaparilla, the bark of the root of mezereon, and gum ammoniac, reduced to impalpable powder, which I

have uniformly observed to discuss tubercles which had not progressed to the suppurative stage. I have in some cases found that this composition excited a degree of irritation by increase of cough. Upon those rare occasions, I have omitted the sarsaparilla and mezereon, and then added the powdered leaves of stramonium. In cases where the cough has assumed a spasmodic character, I have combined powdered opium with decided advantage. A diversity of remedial agents are, from time to time, submitted to the absorbent action of the vessels of the stomach and intestines; and the same principle is not only applicable but necessary with regard to those of the lungs, from the operation of similar causes, and regulated by practical observation.

When ulceration of the lungs has actually taken place by the rupture of some suppurated tubercles, or from hæmorrhage, I combine with some of the preceding agents, as circumstances may require, myrrh, frankincense, digitalis, cinchona, metallic oxyds, &c.: to be hereafter given

in detail in a work which I have been for some time preparing for the press. It is seareely necessary to observe, that the insoluble and fibrous partieles of the remedial agents are discharged from the pulmonary organs by expectoration, and are visible in the sputa. In tuberculous eases, the inhaler should be used three times a day, at equi-distant periods, and four inspirations are the proper dose, if properly eondueted: but, in eases of uleeration, the most favourable time for inhaling is *immediately* after a copious purulent expectoration, without any regard to regular periods, in order that the subtile powder may come into *direct contact* with the bare excavations.

Various means have been reeommended to exeite and promote pulmonary absorption; and, among others, repeated dry emeties, as they are ealled, and sea voyages. To those resourees I am opposed; for I have already remarked, that the digestive organs of eonsumptive patients are generally deranged; although we, in some instances, find the appetite inordinate, from the

gastric secretion being too stimulant. If, then, in a large majority of cases, we add to that derangement by art, a state of exhaustion will be prematurely induced, and we hurry our patient to his grave. Upon this principle I object to sea voyages. If the state of the stomach requires an emetic, let it be administered, but not repeated, unless in cases of urgent necessity. I may also add, that the accommodations of a ship are ill-suited to the reasonable wants of an invalid: and with respect to sea air, charged as it is with moisture and the stimulus of saline particles, instead of being beneficial to that class of patients, I have found it to be highly prejudicial to those persons who came to New York to consult me from the interior of that and other States, and who experienced manifest relief on their first day's journey homeward when out of the reach of its influence.*

* Since my return to England, I find that similar results have been observed by Dr. Carmichel Smyth, and different medical practitioners residing upon the coast. A variety of medicinal waters likewise have been recommended with curative views in all the stages and varieties of chronic pulmonary disease; and among others, those of Bristol Hotwells (once the

Patients labouring under pulmonary consumption are morbidly susceptible of atmospheric vicissitudes; and as every fresh cold would constitute a new and *acute* disease, so the use of the remedies, adapted to the original chronic disease, must be suspended until the symptoms of increased excitement subside. Hence the necessity of the utmost caution to guard against such an occurrence, not only from its immediate effect upon the mucous membrane of the bron-

focus of this class of patients), but *fatal experience* hath, at length, dissipated the delusion, and modern reason now triumphs over antiquated error. Indeed, few situations less eligible could have been selected, even in an age of comparative darkness, from its various local disadvantages, and that too without possessing a solitary sanative equivalent. In truth, the constitutional invalid who could have the temerity to expose himself to the bleak air of Clifton, should calculate upon shortening the duration of his probable term of existence: nor would his situation be at all improved by descending to the bottom of that abrupt declivity; for, in that case, he would be placed on the margin of a muddy tide-water river: at one time enveloped in a humid foggy atmosphere; while, at another time, he would be subjected to the prostrating rays of a vertical sun from which he would have no means of retreat. Those persons, then, who could recommend such a residence to pulmonary patients (*if any such there be in the present day*), must be quite ignorant of its peculiar and ill-adapted localities.

chial tubes, but also from the probable consequence of exciting latent tubercles in the parenchyma of the lungs to inflame and suppurate.

I cannot too strongly ineulcate caution, by pressing upon your minds the dangerous consequences which are likely to ensue from taking cold in the *advanced* stage of that disease, which has so long occupied our time and attention. I had a patient at New York, in whose fate I took a deep interest, from his own moral worth and the great regard I entertain for his amiable family. On the 29th of March, 1824, I commenced my attendance : although his ease, at the outset promised nothing but disappointment, yet his regular and progressive improvement until the 13th of April inspired both his friends and myself with confidence in his ultimate recovery. On that very stormy and fatal day he took a severe cold, which induced considerable excitement. From the consequent antiphlogistic treatment, *without depletion*, he became so prostrate that he died of exhaustion on the 18th of June, in defiance of every effort to renovate the animal func-

tions after the febrile symptoms had subsided. Nor is this a solitary instance of the same cause producing the same effect. Among other precautions, to which I wish to invite your attention, is one of simplicity, and, of course, more likely to escape your observation; it is that of excluding the *direct admission* of even cool air to diseased lungs when exposed to its influence, by the application of a handkerchief to the mouth and nostrils: but should a cold be taken, notwithstanding these preventive precautions, the use of the remedies adapted to the original *chronic* disease must be omitted. In that case, the patient ought to inhale the vapour of a decoction of hops or of wort (the unfermented beer of the brewers) every hour of the day, and keep within-doors, which seldom fails to remove, in two or three days, a slight inflammatory affection of the mucous membrane of the bronchial tubes. The use of the inhaler should then be resumed. But, in the event of considerable febrile excitement, it would be advisable to solicit a determination to the surface in the usual way, and duly attend to the

alvine excreta. I must, however, declare, that I have never met with a case, under such circumstances, which required the lancet. Indeed, the presence of an *open ulcer* in the lungs puts the employment of that fashionable instrument quite out of the question.

I am acutely alive to the lamentable fact that many highly respectable physicians have hitherto reposed great confidence in the use of the lancet, even to the last stage of the disease, and almost to the last hour of life! While I sincerely regret our difference of opinion upon a point of such vital magnitude, I would ask those gentlemen to adduce a solitary case, under the *depleting practice*, which ever terminated favourably in *chronic* disease of the pulmonary organs? I can, on the contrary, declare, most confidently, that I have seen great numbers destroyed by it, as much so as if they had been actually exposed to the dagger of the assassin.

The only plausible reason which can be assigned for repeated depletion, in *the advanced*

stage of pulmonary consumption, is, that the pulse is generally both accelerated and hard, in admitting the correctness of that data, we also know it to be at the same time small; and the fatal consequences, in such cases, which result from GENERAL BLEEDING, demand, imperiously demand its abandonment in the *ulcerative* stage of the disease. Should difficult respiration be another plea for resorting to the lancet, it is a fallacious one, and cannot be supported upon any rational principle: as well might we say, bleed on as long as any buffy appearance is exhibited on the surface, without reflecting, that in a disease of great muscular extenuation, the fibrin is so abundant as to cause the blood to assume the buffy coat, *without any inflammatory action*. When strong action of the vessels indicate bleeding, which is seldom if ever required in chronic disease of the pulmonary organs, it should on no account be repeated, unless the texture be *firm*, and particularly unless the edges be turned inwards, commonly called "cupped."

LOCAL bleeding, or external irritants, will an-

swer all our purposes, without exhausting the patient or compromising the character of our profession. It is a gratifying circumstance, and humanity will rejoice at the revolution of opinion, that since I have delivered public lectures in the principal cities of the United States, the practice of bleeding in the *ulcerative* stage of pulmonary consumption, has been generally discountenanced; and if any physician, in that very interesting country, however elevated his professional rank, were *now* to propose such a remedy, he would be opposed by the observation and good sense of the community. But it is due to the judgment and intelligence of the most eminent physicians in the United States to record their conviction, that the practice of general bleeding in the advanced or *ulcerative* stage of pulmonary consumption, ought to be discontinued.

In entering my solemn and unqualified protest against the practice of *general* bleeding in the *ulcerative* stage of pulmonary consumption, I must inform those gentlemen who entertain adverse opinions, that my data is derived from

long-continued observation, with such opportunities of tracing the progress of the disease, and of marking the effects of the usual remedies, as seldom fall to the lot of the practical physician in his general and varied vocations; and in promulgating, without reserve, the result of more than forty years' experience, I feel that I only discharge an imperative duty in reference to a question of vital importance to the human family.

I have already extended this Lecture much beyond the usual limits, which the peculiar character of the subject under consideration could alone justify; yet I must trespass upon your patient indulgence for a few minutes longer.

The truly gratifying changes from impending danger to renovated health, which I have so often witnessed as the result of *direct* communication with diseased lungs, AND WHICH NO REMEDY, CONVEYED THROUGH THE MEDIUM OF THE STOMACH, COULD HAVE EFFECTED, urge me, with confidence, to press upon your serious attention so palpable an improvement in the

medical management of the disease; not merely as a local remedy, but as the most efficient means of impregnating the system generally, which the constitutional disease unquestionably requires. The experiments of Professor Mayer upon this point are conclusive.

The benefits derived even from the inhalation of vapour, in chronic disease of the pulmonary organs, have been observed by Sir Alexander Crichton, in Russia. He recommends the vapour of boiling tar, with an admixture of subcarbonate of potass, in the proportion of half an ounce to a pound of tar, with the view of neutralizing the pyro-ligneous acid, which would otherwise excite cough: that vapour he advises to be inhaled both day and night.—Dr. Paris also assures us that he has witnessed its sanative effect in pulmonary consumption.

In prosecuting the inquiry which is the subject of this Memoir with perhaps more than ordinary zeal and tenacity, I have been actuated, I freely confess, not exclusively by a sense of

professional duty, but by a more predominant impulse—urgent *personal* considerations. My own lungs, at an early period of my life, were, for many years, visited by severe attacks; and subsequently constitutional disease, of two distinct varieties, had deprived me of two promising children, as I have already stated, long before I had taken my present views of that hitherto inexorable scourge of the human race. Still I had two children left, of matured years, who might be involved in the same calamity; and I appeal to your own feelings, if parental solicitude could require a more powerful stimulus to professional enterprise.

In the well-known extraordinary exertions which I have made on the Western Continent to diffuse my opinions, and recommend the adoption of the doctrines which I have now advanced, and shall hereafter more fully illustrate, I have been chiefly actuated by that sympathy which humanity excites, and that from a sanguine hope, amounting to conviction, that the principles which I advocate, and the practice which I

suggest, will be the means, under Providence, of preserving many promising blossoms, which may, in due season, yield good fruit, and which might otherwise have been destroyed in the bud by a gigantic and rapacious enemy, which had hitherto resisted all opposition.

FINIS.

PREPARING FOR THE PRESS,

BY THE SAME AUTHOR,

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